Guidelines for Amending Urban Boundaries and Functional Classification

October 2002

Washington State Department of Transportation
Planning and Capital Program Management

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Washington State
Department of Transportation

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October 11, 2002

TO: Washington State Department of Transportation
Metropolitan Planning Organizations
County and City Engineers

FROM: Rick Smith, Director,
Planning and Capital Program Management

SUBJECT: Guidelines for Amending

This document describes criteria and procedures for creating and revising federal aid urban boundaries, functional classifications, and federal aid systems. These actions are required to establish the eligibility of specific highways, roads, and streets for expenditure of federal funds for improvements.

Adjustments to urban area boundaries, functional classifications, and federal aid systems are needed to respond to various types of changes. Such changes result from residential, commercial and industrial development; revisions in corporate limits of municipalities; and modifications of urbanized and small urban areas by the U.S. Census Bureau.

The last major realignment of federal aid systems occurred following the 1990 Census and the passage of ISTEA in 1991.

The purpose of this document is to provide a single reference source for those with responsibility for developing revisions to urban boundaries or functional classification. The various sections of this document explain and clarify the guidelines to be followed in updating functional classifications and urban area boundaries.

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Introduction

The Washington State Department of Transportation (WSDOT), in cooperation with the Federal Highway Administration (FHWA), has adopted specific procedures for establishing or amending urban area boundaries and functional classifications. The two are interrelated: the urban area boundary defines the break between rural and urban functional classifications. The material, which follows, defines the concepts and criteria, and establishes procedures to be used by local agencies when requesting changes to urban area boundaries and functional classifications.

Urban Area Boundaries

Urban areas must be established to meet the requirements of Title 23, Section 103, USC, with respect to establishing functional classification systems, in those places, which are designated by the U.S. Bureau of Census as urban. Boundaries are fixed by responsible state and local officials in cooperation with each other, subject to approval of the FHWA Division Administrator. An urban area may be of two types: urbanized area or urban cluster. Urban clusters or small urban areas have populations of 5,000 to 49,999 and are not within an urbanized area. Urbanized areas include a city or multiple cities that have a population of 50,000 or more (central city) and surrounding incorporated and unincorporated areas that meet certain criteria for population size and density. The urbanized and urban areas in Washington State, as designated by the U.S. Bureau of Census, based on the 2000 census, are listed in Appendix A.

Urban area boundaries are fixed primarily to establish eligibility for capital project funding and are not to be confused with study area boundaries that may be selected for the comprehensive urban planning process.

Criteria for Establishing Urban Area Boundaries

1. An urban area boundary, at a minimum, will encompass the entire urbanized area or urban cluster as designated by the Bureau of Census.

2. The boundary will be a continuous line encompassing the urban area designated by the Bureau of Census, the areas of nearby municipalities, and other areas of urban characteristics, or a combination thereof. (There will be no detached portions of any urban area.)

3. The boundary will include the entire area of each included corporate limit, except in unusual cases where a municipality has extended its corporate limits beyond the actual urban area for a considerable distance for a special reason, such as to protect a water supply source or to encompass future industrial or commercial property, etc.

4. The boundary will encompass fringe areas outside of corporate limits with urban characteristics having residential, commercial, industrial, and/or national defense significance.

5. The boundary will encompass fringe area public parks, large places of assembly, large plants, and all such large traffic generators that are within a reasonable distance from the urban area that otherwise would be designated.

6. Areas of rapidly expanding urbanization will be included within the designated boundary if they lie within a reasonable distance from the urban area that would otherwise be designated.

7. Transportation terminals serving the area, such as airports and seaports and their access roads, will be included if the terminals lie within a reasonable distance from the urban area that would otherwise be designated. In some instances, major airports and other transportation terminals may lie beyond an urban area boundary but would need to be encompassed in order to make access roads to these facilities eligible for urban financing if appropriate and desirable.

8. Consideration will be given to the selection of boundary location to include transit lines such as rail transit and bus lines and linkage points such as stations and bus stops where inclusion will not unduly distort the urban area that otherwise would be designated.

9. The boundary will maintain administrative continuity of peripheral routes. In all cases, the boundary will be selected to encompass a functional classification system, which will maintain system continuity and minimize route description. All boundary roads, streets and highways will be totally included or excluded by the boundary lines.

10. The boundary, to the greatest degree possible, will be so selected that it can be located in the field from the data shown on the map. To maintain consistency, it is desirable that the boundary follows physical features such as rivers, streams, irrigation canals, transmission lines, railroads, streets, or highways. In instances where physical features are lacking, the boundary will cross roads, streets, and highways at intersections, major crossroads, and interchanges, if possible, which are readily identifiable in the field.

11. When the boundary has been roughed in following these criteria, as a final step boundary irregularities are to be smoothed out to minimize confusion that irregular boundaries create.

Procedures

Urban area boundaries are established or revised by WSDOT in cooperation with the principal elected local government officials in urban areas and the Metropolitan Planning Organization (MPO) in urbanized areas. All boundaries are approved by FHWA, and where transit is involved in urbanized areas, by the Federal Transit Administration (FTA).

After a new census is completed, the Planning and Capital Program Management Division (P&CPM) initiates the process to revise or establish urban area boundaries. Maps are prepared showing present urban area boundaries, if they exist, and the Bureau of Census boundaries. Copies are sent to the MPO in urbanized areas or to designated local agencies in urban places. The MPO or local agency coordinates its reviews with involved local governmental agencies and transit agency and arbitrate any differences. The proposal is sent by the local agency or the MPO to the Regional Highways and Local Programs

office with indications of concurrence or non-concurrence.

P&CPM convenes a Boundary Review Team to review the local submittal and resolve areas of non-concurrence.

The Boundary Review Team consists of a staff representative from each of the following:

- Planning and Capital Program Management Division, WSDOT
- Highways and Local Programs Office, WSDOT
- Either a representative of the local agency or the Metropolitan Planning Organization, as appropriate.
- WSDOT Region

The Boundary Review Team moderates unresolved differences between local agencies and makes the final determination of the new or revised urban area boundary.

The Boundary Review Team's determination is forwarded to FHWA for review and approval. Concurrence by FTA is required for urbanized areas of 200,000 or greater population and in urbanized areas of 50,000 to 200,000 population if the urban area boundary has significant transit implications. The WSDOT Planning Office, through the Region Local Programs Engineer, routes the approved boundary to the affected local agencies, and to the MPO in urbanized areas.

Functional Classification

Functional classification is the division of highways, roads, and streets into groups having similar characteristics of providing mobility and/or land access. For transportation planning and design purposes, this grouping by similar characteristics recognizes that individual roads and streets do not serve travel independently of each other. As most travel involves movement through a network of roads, it is necessary to determine how travel can be channelized within the roadway network in a logical and efficient manner. A functional classification defines the major role that a road or street serves within the total existing and future roadway network. In simple terms, highways, streets, and roads function as arterials, collectors, or local access. Arterials provide the highest degree of mobility and limited access to local property. Collectors generally provide equal emphasis upon mobility and land access. Local roads and streets emphasize land access in lieu of mobility (speed and reduced travel times). (See Figures 1 and 2.) Somewhat different criteria are used to determine functional classifications in rural areas as compared to urban and urbanized areas as described in the following subsections.

Figure 1. Channelization of Trips

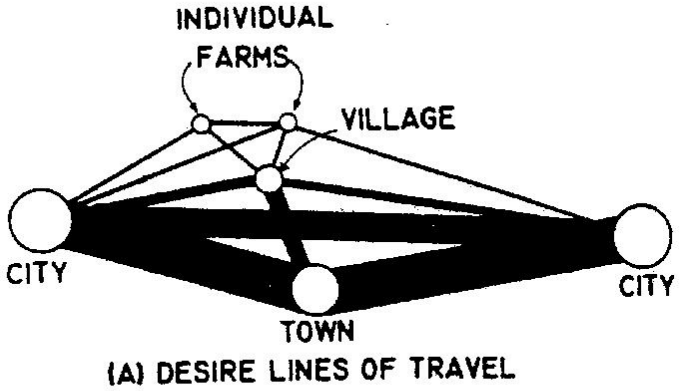
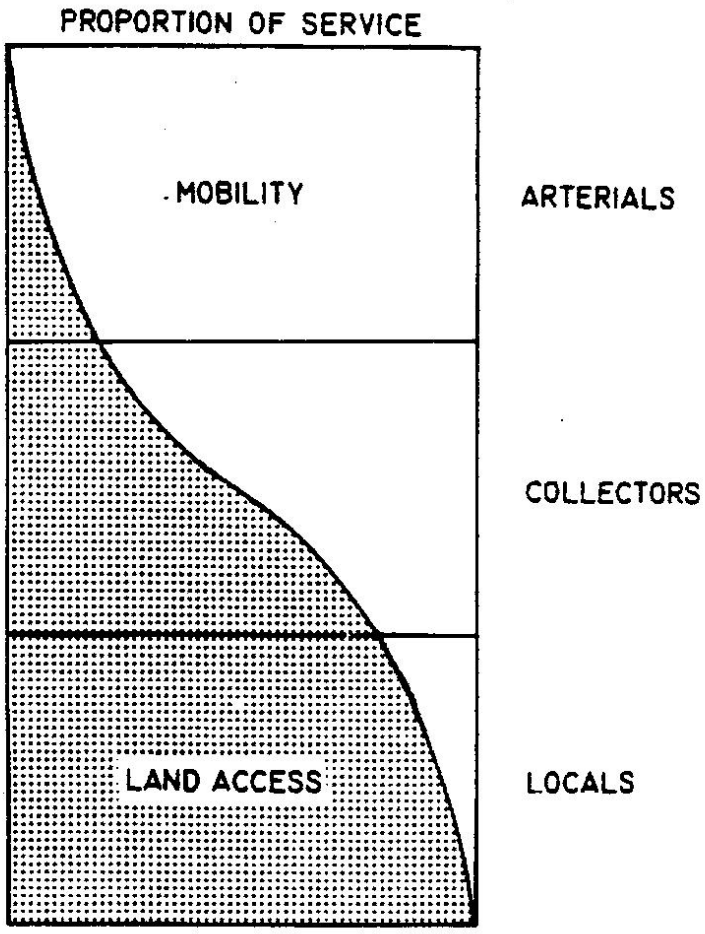


Figure 2. Relationship of Functional Classifications in Serving Traffic Mobility and Land Access



Characteristics of Functional Classifications in Rural Areas

Rural roads consist of those facilities that are outside of urban and urbanized areas. They are categorized into five functional classifications: principal arterials, minor arterial roads, major and minor collector roads, and local roads.

Rural principal arterials consist of a connected rural network of continuous routes having the following characteristics:

- Serve corridor movements having trip length and travel density characteristics indicative of substantial statewide or interstate travel.
- Serve all, or virtually all, urban areas of 50,000 and over population and a large majority of those with population of 25,000 and over. (See footnote.)
- Provide an integrated network without stub connections except where unusual geographic or traffic flow conditions dictate otherwise (e.g., international boundary connections and connections to coastal cities).

Principal arterials are stratified into two sub sets: interstate and other principal arterials. The interstate sub-classification consists of all presently designated routes of the Interstate System. Other principal arterials consist of all non-interstate principal arterials.

Rural minor arterials should, in conjunction with the principal arterials, form a rural network having the following characteristics:

- Link cities and larger towns (and other traffic generators, such as major resort areas, that are capable of attracting travel over similarly long distances) and form an integrated network providing interregional (including interstate regions) and intercounty service.
- Be spaced at such intervals, consistent with population density, so that all developed areas of the state are within a reasonable distance of an arterial highway.
- Provide (because of the two characteristics defined immediately above) service to corridors with trip length and travel density greater than those predominately served by rural collector or local systems. Minor arterials therefore constitute routes whose design should be expected to provide for relatively high overall travel speeds with minimum interference to through movement

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[a]The term serve is difficult to define since it varies according to the size of the urban area, the functional system under consideration, and the effects of natural barriers where they exist. As a *guide,* the rural principal arterials may be considered to serve an urban area if they either penetrate the urban boundary or come within 10 miles of the center of the place and are within 20 minutes travel time (off-peak periods) of the center of the place via a minor arterial highway. Rural minor arterials serve an urban area if they either penetrate or come within 2 miles of the urban boundary.

Rural collector roads generally serve travel of primarily intracounty rather than statewide importance and constitute those routes on which (regardless of traffic volume) predominant travel distances are shorter than on principal or minor arterial routes. Consequently, more moderate speeds may be typical on the average. In order to define more clearly the characteristics of rural collectors, this system is sub-classified into two types: major collector roads and minor collector roads.

Major Collector Roads

- Provide service to any county seat not on an arterial route, to the larger towns not directly served by the higher systems, and to other traffic generators of equivalent intracounty importance, such as consolidated schools, shipping points, county parks, important mining and agricultural areas, etc.;
- Link these places with nearby larger towns or cities, or with routes of higher classification; and
- Serve the more important intracounty travel corridors.

Minor Collector Roads

- Are spaced at intervals, consistent with population density, to collect traffic from local roads and provide for all developed areas to be within a reasonable distance of a collector road
- Provide service to the remaining smaller communities; and
- Link the locally important traffic generators with their rural hinterland.

Rural local roads will, of course, constitute the rural mileage not classified as principal arterial, minor arterial, or collector road. Rural local roads have the following characteristics:

- Serve primarily to provide access to adjacent land.
- Provide service to travel over relatively short distances as compared to collectors or arterials.

Rural Functional Classification Criteria

Criteria for functionally classified roads in rural areas, in accordance with the characteristics of each classification described above, are summarized in Table 1. These criteria can be used in developing or modifying rural functional classifications. Appendix B gives a more detailed explanation of each of the items in Table 1.

Extent of Rural Systems

The systems criteria have been expressed primarily in qualitative, rather than quantitative terms. Because of varying geographic conditions (population density, spacing, and size of cities, density, and pattern of road network), it is not feasible to define uniform criteria based on size of population centers, on trip length and traffic volume, or on spacing of routes, that would apply to all systems in all areas. The results of classification studies conducted throughout the country do, however, show considerable consistency in the relative extent of each system, expressed as a percentage of total rural road mileage. The expected ranges are shown in Table 1.

Just as the states vary across the country, within the ranges noted in Table 1, county totals will vary in Washington. When classification changes are proposed, the total miles by classification in each county should be within the ranges listed in Table 1. If the proposed change results in percentages beyond the ranges or extends the totals further outside the range, an explanation should be included. For example, one explanation for having more collectors is that geographic conditions in the county restrict the normal pattern of road development. Other counties may have a higher principal arterial percentage because they are a “bridge” county traversed by arterial routes serving statewide travel.

Table 1. Rural Functional Classification Criteria

	Functional Classification			
			Collector	
Item	Principal Arterial	Minor Arterial	Major	Minor
1. Mileage (% total rural miles)	2--4	4--8	2--25	
2. Daily vehicle miles (DVM) -- percent Accumulative	40--50	20--35	15--25	
3. Travel Generators				
a. Population (persons)	> 30,000	10,000 -- 30,000	1,500 -- 10,000	< 1,500
b. Recreational/cultural (population equivalencies)[a]	> 30,000	10,000 -- 30,000	1,500 -- 10,000	< 1,500
4. Trip length	Interstate and statewide	Interregional	Interregional and intercounty	Intracounty
5. System continuity[b]	Required	Required	Desirable	
6. Directness of travel and feasibility of route	When alternate routes are available in the travel corridor, the route with the highest design standard, greatest cost benefit, and differential not greater than 10 percent in mileage is to be assigned the higher functional classification.			
7. Relation to Transportation Plan	To be considered	To be considered	To be considered	

[a]See Appendix B for the process used to equate visitations to population.

[b]Subject to specific conditions such as natural barriers.

> greater than

< less than

Characteristics of Functional Classifications in Urban Areas

The four functional classifications for urban areas are principal arterials, minor arterials, collector streets, and local streets. The differences in the nature and intensity of development between rural and urban areas cause these classifications to have characteristics that are somewhat different from the rural classifications.

Urban principal arterials provide a network of streets and highways, which can be identified as unusually significant to the area in which lies in terms of the nature and composition of travel it serves. In urban areas (5,000 to 50,000 population), these facilities may be very limited in number and extent, and their importance may be primarily derived from the service provided to travel passing through the area. In urbanized areas (over 50,000 population), their importance also derives from service to rural-oriented traffic, but equally or even more important, from service for major travel movements within these urbanized areas.

Urban principal arterials serve the major centers of activity of a metropolitan area, the highest traffic volume corridors, and the longest trip desires and carry a high proportion of the total urban area travel on a minimum of roadway mileage. As such, the principal arterials carry the major portion of trips entering and leaving the urban area, as well as the majority of through movements desiring to bypass the central city. In addition, significant intraarea travel, such as between central business districts and outlying residential areas, between major inner city communities, or between major suburban centers, are served by this class of facility. Frequently, principal arterials carry important intraurban as well as intercity bus routes. This network provides continuity both internally and for all rural arterials, which intercept the urban boundary.

Because of the nature of the travel served by principal arterials, almost all fully and partially controlled access facilities are part of this functional class. However, this network is not restricted to controlled access routes. In order to preserve the identification of controlled access facilities, principal arterials are stratified as (1) interstate, (2) other freeways and expressways, and (3) other principal arterials (with no control of access).

The spacing of urban principal arterials is closely related to the trip-end density characteristics of particular portions of the urban areas. While no firm spacing rule can be established which will apply in all circumstances, the spacing of principal arterials (in larger urban areas) may vary from less than 1 mile in the highly developed central business areas to 5 miles or more in the sparsely developed urban fringes.

The concept of service to abutting land is subordinate to the provision of travel service to major traffic movements. It should be noted that only facilities within the “other principal arterial” subclass are capable of providing any direct access to land, and such service is purely incidental to the primary functional responsibility of providing traffic mobility.

Urban minor arterials interconnect with and augment urban principal arterials and provide service to trips of moderate length at a somewhat lower level of travel mobility than principal arterials. This network also distributes travel to geographic areas smaller than those identified with the principal arterial system.

The minor arterial street system includes all arterials not classified as principal and contains facilities that place more emphasis on land access than the higher system. Such facilities may carry local bus routes and provide intracommunity continuity but ideally do not penetrate identifiable neighborhoods. This network includes urban connections to rural collector roads where such connections have not been classified as urban principal arterials.

The spacing of minor arterials may vary from 1/8 to ½ mile in the central business district to 2 to 3 miles in the suburban fringes but normally are not more than 1 mile in fully developed areas.

Urban collector streets provide both land access service and traffic circulation within residential neighborhoods and commercial and industrial areas. Collectors differ from principal and minor arterials in that collectors may penetrate residential neighborhoods, distributing trips from the arterials through the area to the ultimate destination. Conversely, collectors also collect traffic from local streets in residential neighborhoods and channel it to the arterials. In the central business district and in other areas of like development and traffic density, collectors may include the street grid, which forms a logical entity for traffic circulation.

Urban local streets comprise all facilities not classified as principal arterial, minor arterial, or collector street. Local streets provide direct access to abutting land and access to the higher classification facilities. They offer the lowest level of mobility and usually contain no bus routes. Service to through traffic movement usually is deliberately discouraged.

Urban Functional Classification Criteria

Criteria for functionally classifying roads in urban areas, in accordance with the characteristics of each classification described above are summarized in Table 2. These criteria provide guidance for developing or modifying the urban functional classifications. Appendix B should be consulted for additional details about the criteria of Table 2.

Relationship of Urban and Rural Functional Classifications

The functional classification of urban routes crossing the urban area boundary into the rural area is decreased by one step. This change is due to the decreasing population density and a generally increasing importance of land accessibility.

Coordination of Urban and Rural Classifications

Urban Functional Class	***Rural Functional Class***
Urban principal arterial	Rural principal arterial or rural minor arterial
Urban minor arterial	Rural major collector
Urban collector	Rural minor collector
Urban local access	Rural local access

Table 2. Urban Functional Classification Criteria

		Functional Classification		
Item		*Principal Arterial*	*Minor Arterial*	*Collector*
1. Mileage (percent of total urban miles)		5 -- 10	10 -- 15	5 -- 10
2. Daily vehicle miles of travel (DVM) - percent accumulative		40 -- 65	15 -- 25	5 -- 10
3. Travel generators:				
a. Population	people	> 10,000	5,000 -- 10,000	< 5,000
b. Industrial	employees	3,000 employees	1,000 -- 3,000 employees	1,000 employees
c. Commercial				
Shopping centers and CBD's - (appendix B)		Regional	Community	Neighborhood
Ports and terminals	annual tons	> 4,000,000	1,000,000 -- 4,000,000	250,000 -- 1,000,000
Airports – (appendix B)		Primary	Secondary	Feeder
d. Recreational/cultural[a]	pop. equiv.	> 10,000	5,000 -- 10,000	< 5,000
e. Governmental:				
Military	population	> 20,000	10,000 -- 20,000	< 10,000
Civil	population	> 1,500	100 -- 1,500	< 100
Educational/institutional	population	> 5,000	1,000 -- 5,000	< 1,000
4. Feasibility of route and directness of travel		When alternate routes are available in the travel corridor, the route with the highest design standard, greatest cost benefit, and a differential not greater than 10 percent in mileage is to be assigned the higher functional classification.		
5. Traffic characteristics and trip length		b	c	d
6. Spacing (miles)		1/2 in CBD; 1 in urban residential; 1 -- 5 in suburban and urban fringe	1/8 -- 1/2 in CBD; 1/2 -- 1 in urban; 1 -- 3 in suburban and urban fringe	Not less than 1/4 mile from higher Classified arterials
7. System continuity[e]		Required	Required	Desirable
8. Multiple Services		Surface type mass transit systems and Intermodal connections	Limited transit services	Not applicable
9. Relation to Transportation Plan		To be considered	To be considered	To be considered

[a]Population or population equivalencies (see Appendix B)

[b]Through trips and long distance internal trips between travel generators of like value > greater than

[c]Intergenerator trips between generators of like value in relatively close proximity

[d]Intraurban and local trips to higher classified facilities < less than

[e]Subject to specific conditions such as natural barriers

Procedures (updated 2004)

1. Requests to revise functional classification are developed by the agency having jurisdiction over the route. For those routes extending into another jurisdiction, i.e., a route extending into another city or county, concurrence from the other agency is required.

   Functional classification revision requests should contain the following information:

   - A written description of the route and its termini points
   - The length.
   - A vicinity map showing the proposed changes.
   - Brief statement explaining why the proposed change is requested and justification for the change.

   A request form developed by the Highways and Local Programs Office is enclosed in Appendix C.

2. The request is submitted to the Region Highways and Local Programs Engineer and MPO (if required) for review and comment. If the Region Highways and Local Programs Engineer concurs, he forwards the request and MPO concurrence to the Transportation Data Office of Strategic Planning and Programming Division (SP&P) or, if he does not concur, he returns the request to the local agency to resolve any disagreements.

3. The Transportation Data Office reviews the request and forwards it to FHWA to obtain their concurrence or returns the request to the Region Highways and Local Programs Engineer if additional information or concurrences are needed before FHWA action can be requested.

4. FHWA's approval, or non-approval, is routed to the local Region Highways and Local Programs Engineer by the Transportation Data Office.

5. Region Highways and Local Programs Engineer notifies local agencies involved and MPO.

Appendix A
Urbanized and Urban Areas in Washington State

Urbanized and Urban Areas
In
Washington State
September 25, 2000

Urbanized Areas (population 50,000 and over)

Bellingham
Bremerton/Port Orchard
Longview/Kelso
Olympia/Lacey/Tumwater
Richland/Kennewick/Pasco
Seattle/Everett
Spokane/Millwood
Tacoma
Vancouver
Yakima/Selah/Union Gap

Urban Areas (population 5,000 to 49,999)

Aberdeen/Hoquiam/Cosmopolis
Anacortes
Camas/Washougal
Centralia/Chehalis
Cheney
Clarkston
Ellensburg
Enumclaw
Ephrata
Ferndale
Grandview
Lynden
Moses Lake
Mount Vernon/Burlington
Oak Harbor
Otis Orchards/East Farms
Port Angeles
Port Townsend
Pullman
Sedro-Woolley
Shelton
Sunnyside
Toppenish
Walla Walla/College Place
Wenatchee/East Wenatchee

Appendix B
Detailed Functional Classification Criteria

Development of new and/or changes of existing functional classifications is based on an evaluation of the following criteria:

- Type and magnitude of travel generators.
- Route feasibility and directness of travel.
- Traffic characteristics and trip length.
- Spacing between types of functional classes.
- Continuity of various functional classes.
- Multiple service capability (accommodation of other modes of transportation).
- Relationships of functional classes to transportation plan(s).
- Miles and travel classification control values.
- Integration of classifications of adjoining jurisdictions.

Travel Generators

Any facility that creates or attracts vehicular traffic movements is a travel generator. The travel generators to be used in the classification process have been ranked and the parameters for each functional class have been established. Listed below are the travel generators and the parameters to be used in the functional classification process.

Population Generators

A population generator is defined as any designated urbanized or urban area or incorporated city or town not within an urban area. The population of a place generally reflects its economic importance and capacity for generating and attracting travel; therefore, the greater the population, the higher the classification of the facility serving it. Generators of similar population and economic importance should be served by routes of the same functional classification. The functionally classified network required for connecting the appropriate population generators has been established as follows:

Table B-1. Guidelines for Population Generators vs. Functional Classification

	Functional Classification/Population			
			Collectors	
Area Type	*Principal Arterials*	*Minor Arterials*	*Major*	*Minor*
Rural	over 30,000	10,000 -- 30,000	1,500 -- 10,000	under 1,500
Urban[a]	over 10,000	5,000 -- 10,000	under 5,000	

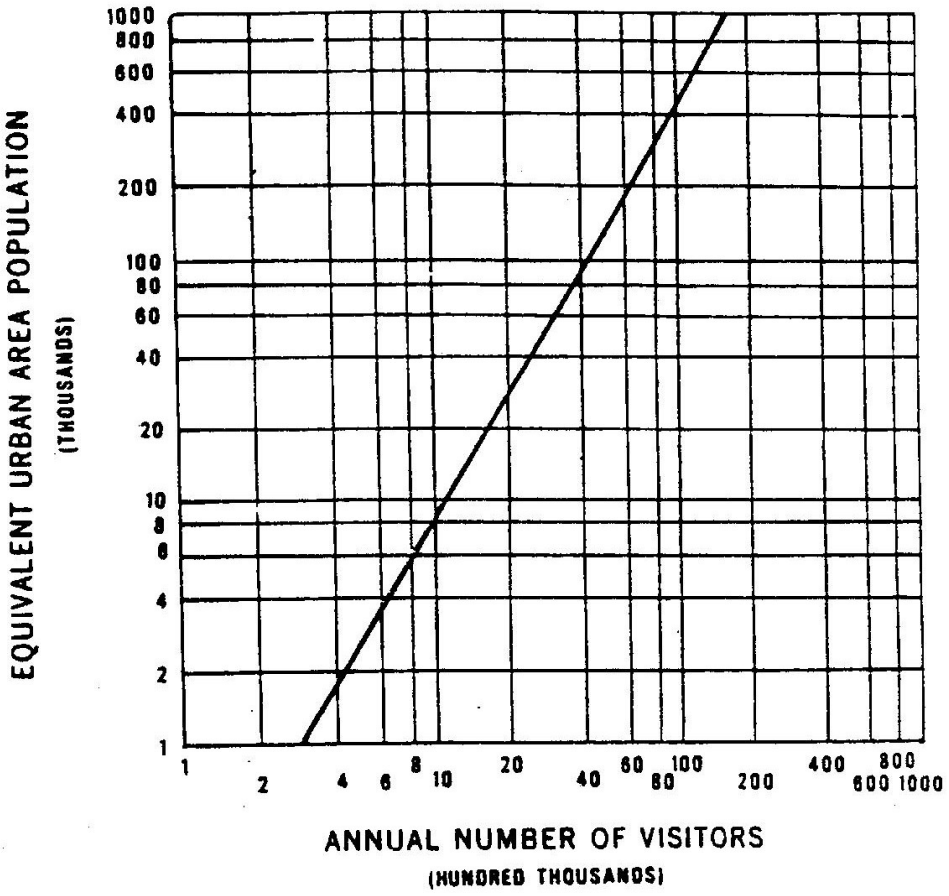
[a]In the urbanized and urban areas, consideration is to be given for connecting only those population generators within the established federal urban area boundary.

Recreational/Cultural Generators

These traffic generators are used by society during its leisure time for recreational and cultural purposes. Included are parks, beaches, national and state forests, civic centers, sports arenas, historical sites and monuments, outdoor theaters, state and county fairgrounds, and other facilities. For this type of travel generator, annual visitations are converted to population equivalencies.

If several recreational travel generators are located closely together or can be served by only one possible route, such as in a coastal peninsula or mountainous area, the visitations may be combined in the ranking process. Annual recreational generator visitations are to be reduced to a population equivalency by the following graph. Enter the chart at the bottom with the appropriate number of annual visitations and read on the left the population equivalency at the point where the vertical visitation line intersects the curve. Enter this population equivalency value into the appropriate area of the population rankings (see Table B-1).

VISITATION VS. EQUIVALENT POPULATION
FOR RANKING RECREATION GENERATORS



Industrial Generators

Industrial generators are facilities having as their prime function the manufacture and/or processing of material and goods. With few exceptions, most industrial generators will be contained within or in close proximity to urban areas where transportation modes for the processed goods as well as an adequate labor force are available. The impact of the industrial generators must be considered in the urban areas where they exist, while rural classification evaluation may in most cases disregard this element. It is to be considered in the functional classification of rural facilities when a high level of activity is maintained over a reasonably long period of time, e.g., the hauling of forest and/or agricultural products.

The following subcategories and employment figures are to be used in the evaluation of industrial generators.

- Large — a complex with an aggregate employment in excess of 3,000.
- Medium — a complex with an aggregate employment between 1,000 and 3,000.
- Small — a complex or facility with employment less than 1,000.

Commercial Generators

Included in this category are the central business district, shopping centers, airports, port and railway warehousing, and terminals. Commercial generators are also storage or warehousing areas from which distribution is made to retail outlets and includes processing plants such as fruit packing and storage warehouses and creameries. An area to be considered within this category must be definable with concentrated retail goods and personal services outlets, distribution centers or processing plants, or a combination thereof. The following subcategories and parameters are to be used in the evaluation of commercial generators.

Shopping Centers and Central Business Districts (CBD)

- Regional — an area with three or more department stores and 75 or more support retail and/or personal service outlets.
- Community an area with at least one department store and between 25 and 75 support retail and/or personal service outlets.
- Neighborhood— an area having at least one supermarket as the major outlet and other facilities limited to day-to-day needs and personal services.

Ports and/or Railway Terminals

- Major— those facilities handling in excess of 4,000,000 tons annually.
- Minor — those facilities handling between 1,000,000 and 4,000,000 tons annually.

- Other — those facilities handling between 250,000 and 1,000,000 tons annually

Airports — The terms and parameters listed are extracts from the report of the State Aeronautics Commission for the establishment of the Statewide Airport Plan.

- Primary — airports handling over 1,000,000 passenger boardings, or 250,000 aircraft operations (take offs or landings), or 50,000 tons of air cargo annually.

- Secondary — airports handling between 50,000 to 1,000,000 passenger boardings, or 100,000 to 250,000 aircraft operations, or 5,000 to 50,000 tons of air cargo annually.

- Feeder — airports handling less than 50,000 passenger boardings, or 100,000 aircraft operations or 5,000 tons of air cargo annually.

Governmental Generators

This group of travel generators includes military bases, colleges, universities, governmental administrative complexes, and others. For military establishments, a combination of military and civilian resident population and the employed civilian support personnel should be considered in estimating population.

For defining the population of civil (city, county, state and federal) administrative complexes, consider those personnel whose main function is performed within the complex.

Educational/Institutional facilities are universities, colleges, vocational and technical institutes, schools, hospitals, penal institutions, etc. Population values are given as the appropriate aggregate of on-campus students, staff, patients, inmates and support personnel.

The size of governmental generators to be served by each functional class has been established as indicated in Table B-2:

Table B-2. Guidelines for Government Generators

Type of Travel Generator	*Functional Classification/Population*		
	Principal Arterial	*Minor Arterial*	*Collector*
Military (urban)	over 20,000	10,000 -- 20,000	under 10,000
Civil (urban)	over 1,500	100 -- 1,500	under 100
Educational/ Institutional (urban)	over 5,000	1,000 -- 5,000	under 1,000

Feasibility of Route and Directness of Travel

The feasibility of route and directness of travel are to be considered where a choice of routes between areas has less than a 10 percent distance differential. The higher functional classification is to be assigned to the route having the larger volume of traffic, higher degree of development, and ability to accommodate further development along the existing alignment.

Traffic Characteristics and Trip Length

The term traffic characteristic as used herein is more clearly associated with trip purpose rather than such traffic composition measures as percentage of trucks, pickups, passenger vehicles, etc. Basic information for evaluating this element is data obtained in origin-destination studies. When such data are not available, the evaluation is to be made on the basis of the service the route is intended to provide.

In rural areas the facilities providing for the interstate and statewide travel desire, will be the principal arterials in most, if not all, cases. The major portion of interregional travel desire is considered to be served by minor arterials. These facilities providing for interregional travel desire will generally be of substantial length and may entirely cross any single region, and thus provide the interregional service for relatively long trip desire. Major collectors provide for the interregional and intercounty travel desire and serve as the major feeder system to the principal and minor arterials. Minor collectors provide for the major portion of the intracounty travel desire, not satisfied by higher classifications, on a facility with a higher design than that on the local access roads. The intended service in rural areas is as follows:

Table B-3. Rural Functional Classification Guidelines -- Type of Travel Service

Functional Classification	*Principal Arterial*	*Minor Arterial*	*Collector*	
			Major	*Minor*
Type of travel	Interstate and Statewide	Interregional	Intraregional and Intercounty	Intracounty

This classification element is of little or no value in the evaluation process of the urban areas of 5,000 to 50,000 because of the relatively small land area within the urban boundary. In urbanized areas (over 50,000 population) consideration is to be given the trip length within the area and the connections required between travel generators in answer to travel desire as follows:

Table B-4. Urban and Urbanized Areas Functional Classification Guidelines -- Type of Travel Service

Functional Classification	*Principal Arterial*	*Minor Arterial*	*Collector*
Type of travel	Through trips (rural to rural) and long distance internal trips between travel generators of like value	Internal trips between travel generators of like value in relatively close proximity	Intraurban and local trips to a higher classified facility

Spacing

In rural areas, the spacing of the principal and minor arterials is dictated by travel desire and generator demands. The collectors are spaced such that all identifiable and ranked travel generators are within a reasonable driving time of a higher classification road and all county seats not served by either a principal or minor arterial are served by a rural major collector.

In urban or urbanized areas, the spacing of various functional classifications is usually less in order to accommodate traffic flow in the CBD and between the CBD and industrial, commercial, and residential areas. The values given below indicate the minimum distance between facilities of like classification. The prime consideration in assigning functional classification is the service to the travel generators with spacing as a qualifier toward the accomplishment of service.

Table B-5. Urban and Urbanized Areas Guideline for Functional Classification/Spacing

	Functional Classification/Spacing		
Location	*Principal Arterial*	*Minor Arterial*	*Collector*
CBD	1/2 mile	1/8 -- 1/2 mile	1/4 mile to higher classified facility in all urban regions[a]
Urban residential	1 mile	1/2 -- 1 mile	
Suburban and urban Fringe	1 -- 5 miles	1 -- 3 miles	

[a]In some CBD's and in other areas of like development, the spacing of collectors may be less to incorporate the downtown circulation system including consideration of adjacent streets which may act as one-way couplets.

System Continuity

The principal and minor arterial functional classifications must be continuous, without any breaks, except that geographical or topographic conditions may otherwise dictate. In isolated cases, an arterial may have a beginning point at a specific travel generator (population or recreational area), but its ending termini must be at a junction with an equal or higher functionally classified facility. Continuity for urban collectors and rural major collectors is desirable and should be obtained if possible. System continuity is generally not necessary for the rural minor collectors.

Multiple Service Capability

Multiple service capability is defined as the capability of a route to accommodate other modes of transportation (movement of people or goods) on the same facility *without a* significant impact on normal traffic flow, This classification element need not be considered in the evaluation of rural facilities, except when they are in close proximity to the urban areas.

In urban areas the factors which should be considered in the evaluation of existing facilities are: (1) the impact other rubber tired transportation modes (buses, tucks, etc.) have on the normal traffic flow; (2) the capability of the route for improvement to better accommodate other modes; (3) the ability of other transportation mode use to satisfy the demand or desire and accomplish the objectives by current routings; and (4) consideration of an alternate route which would or could be improved to better accommodate other transportation modes. The route or routes, which would best accommodate other transportation modes, should generally have a higher functional class assignment than the alternate routes with all other factors in the evaluation being equal.

Relationship of Route to Transportation Plan

The relationship of routes to the regional or local transportation plan can be considered as an element in the classification evaluation process only where transportation plans have been developed. The State Transportation Plan is used in evaluating the state highway system. Where comprehensive long-range planning has been performed, the higher functional classifications should be assigned to those routes having the greatest importance in the plan. The proper evaluation and assignment of functional class to the existing facilities indicates the routes performing the higher functions or service under existing conditions. In effect, this produces a current transportation plan, which does not take into consideration future growth, land use, and zoning restrictions; however, the classified facilities will generally be the "backbone" of the future transportation plan.

Classification Controls

In order to obtain balanced functionally classified systems, both rural and urban, two primary controls have been established: (1) miles by functional class; and (2) travel by functional class. In establishing these controls, it is not the intent to restrict the miles and travel within an urban area, county, or planning region to the established parameters but rather to establish statewide controls when the mileage and travel is aggregated on a rural area and urbanized and urban area basis. Geographic, topographic, and

land use factors in the rural areas, coupled with size in the urban areas, will play a large part in the determination of functional classifications. Percentage parameters have been established on a statewide basis for aggregating the rural and urban systems by functional class as follows:

Table B-6. Guidelines on Extent of Rural Functional Systems

	Range (percent)	
System	*VMT*	*Miles*
Principal arterial system	40 -- 50	2 -- 4
Principal arterial *plus* minor arterial road systems	45 -- 75	6 -- 12
Collector road system	20 -- 35	20 -- 25
Local road system	5 -- 20	65 -- 75

Extent of Mileage and Travel on Urban Systems

Table B-7 contains guideline ranges of travel volume (VMT) and mileage of each of the four functional systems for urban and urbanized areas. Systems developed for each area using the criteria will usually fall within the percentage ranges shown.

Table B-7. Guidelines on Extent of Urban Functional Systems

	Range (percent)	
System	*VMT*	*Miles*
Principal arterial system	40 -- 65	5 -- 10
Principal arterial *plus* minor arterial street systems	65 -- 80	15 -- 25
Collector street system	5 -- 10	5 -- 10
Local street system	10 -- 30	65 -- 80

When the mileage of the functionally classified facilities exceeds these percentages based upon the total mileage within the urban area, county, or planning region, the reasoning and rationale for the excess is to be documented and supporting information furnished. In developing these data, the following instructions are to be adhered to:

1. Rural functionally classified mileage is to include the classified facilities in rural and unincorporated areas and the classified facilities within incorporated towns or cities of 0 to 4,999 population that are not included within a federal aid urbanized or urban area boundary.

2. Urban functionally classified mileage is to include all classified facilities within incorporated cities and towns and unincorporated areas lying within the established federal urbanized or urban boundaries.

System Integration

The final step in the classification procedure is to assemble all areas which have had the streets, roads, and highways individually classified (urban areas, counties, or regions) and to review the individual products as a whole. This final step determines the changes in functional class assignment of routes that cross the federal aid urban and/or county boundaries and consistency of functional classification with those of adjoining states and provinces. With the resolution of these changes by the involved agencies, a unified statewide classification of streets, roads, and highways with the required continuity is established.

Appendix C
Federal Functional Classification Requests

Washington State
Department of Transportation

FEDERAL FUNCTIONAL CLASSIFICATION REQUESTS

This form has been developed for use in all future requests for Federal Functional classification changes.
One form should be completed and submitted for each requested classification change. Functional classification changes require coordination with the MPO, if applicable.
Upon completion of the requested forms they should be submitted to the WSDOT Region Local Programs Engineer with a transmittal letter signed by the Mayor, Chairman of the Board or other responsible official of the agency.

1. COUNTY or CITY NAME	COUNTY or CITY NO. *(refer to Local Agency Guidelines)*
2. LOCAL AGENCY CONTACT PERSON	TELEPHONE NO.
3. LOCAL NAME OF ROUTE	ROUTE NO. *(if State Route use SR No.)*

4. TERMINI OF ROUTE (*mile post or other identification)*

FROM TO LENGTH: Miles

5. TYPE OF AREA *(mark appropriate space):* ☐ URBAN ☐ RURAL

6. EXISTING FUNCTIONAL CLASSIFICATION	PROPOSED FEDERAL FUNCTIONAL CLASSIFICATION

(major collector, minor collector, principal arterial, minor arterial collector, local system)

7. SPACING *(distance to parallel Federal functionally classified route)* Miles:

8. DOES ROUTE EXTEND INTO ANOTHER JURISDICTION ☐ YES ☐ NO
(If yes – concurrence from the other affected agency is required – unless the functional classification can logically be changed between agencies.)

9. EXISTING ROAD CHARACTERISTICS

Roadway Width (incl. shoulders): ft.

Surfacing Type *(mark appropriate space)* ☐ Gravel ☐ACP ☐ BST ☐Earth ☐Other:

10. TRAFFIC GENERATORS *(what generator does route serve?)*

INDUSTRIAL: Employees _____ VPD _____

AIRPORTS: Annual Flights _____

MILITARY INSTALLATIONS: Type _____

SHOPPING CENTER: No. Stores _____

OTHER: Type _____ VPD _____

SHIPPING POINTS: Annual Tons _____

RECREATIONAL: Annual Visitors _____
(parks, ski resorts, lakes, beaches, etc.)

AGRICULTURE AREAS: _____

COLLEGE OR UNIVERSITY: Enrollment _____

GOV. INSTITUTION: VPD _____

11. Are there zoning ordinances which can restrict growth or encourage growth of any of the above generators? Please indicate below.

12. TRAFFIC (at significant volume change locations)

M.P. _____ EXISTING TRAFFIC _____ VPD	M.P. _____ EXISTING TRAFFIC _____ VPD
Percent through traffic _____	Percent through traffic _____
Future Traffic *(15 years)* _____ VPD	Future Traffic *(15 years)* _____ VPD

13. Written description of route *(general characteristics including alignment, speed limit and how it relates to the surrounding area in terms of importance.)*

14. A brief description why the proposed change is requested and justification for the change.

15. Additional remarks to more fully explain the situation.

16. Attach a vicinity map showing the proposed changes, and existing Federal Functional Classifications.

FEDERAL FUNCTIONAL CLASSIFICATIONS

FEDERAL FUNCTIONAL CLASSIFICATION CODES FOR RURAL AREAS

01 Rural Principal Arterial - Interstate

02 Rural Principal Arterial - Other

06 Rural Minor Arterial

07 Rural Major Collector

08 Rural Minor Collector

09 Rural Local Access

FEDERAL FUNCTIONAL CLASSIFICATION CODES FOR URBAN AREAS

11 Urban Principal Arterial - Interstate

12 Urban Principal Arterial - Other Freeways and Expressways

14 Urban Principal Arterial - Other

16 Urban Minor Arterial

17 Urban Collector

19 Urban Local Access